

**To:** John Amos [John@skytruth.org]  
**Cc:** []  
**Bcc:** []  
**From:** CN=Phil North/OU=R10/O=USEPA/C=US  
**Sent:** Mon 2/22/2010 6:58:40 PM  
**Subject:** Re: Pebble superimposed on Seattle  
[Washington DC from 20 miles.jpg](#)  
[Seattle from 20 miles.jpg](#)  
[NF Koktuli.jpg](#)

Hi John,  
Thanks for the imagery.

I did some analysis of my own. Using tailings density estimates from Dave Chambers I calculated the area that would be covered by 9 billion tons of tailings. Then I looked around the site to find a nearby basin where it might fit. My back-of-napkin calculations are as follows:

| Average Depth(ft) | Area covered(sq mi) |
|-------------------|---------------------|
| 700               | 8.8                 |
| 500               | 12.3                |
| 300               | 20.5                |
| 100               | 61.5                |
| 1                 | 6149                |

This is assuming a density of 105 lbs/cu ft.

On further discussion the 9 billion tons number may be high. A think 4 to 9 billion tons of waste is a more reasonable way to say it. So the areas or depths could be half of what I calculated. Or some combination of area and depth would lead to a different number. The most obvious place to put this much material near the mine site is the basin of the North Fork Koktuli (though I have not seen any proposal to do so). So I used the 300 foot average depth for that site to get a rough idea of what we might be looking at. I also overlaid the area for 100 average depth on images of Seattle and Washington DC. tailings.

Please don't use any of this information as is. Though feel free to calculate your own numbers and generate your own maps. As I said it is back-of-the-napkin work and is probably a bit too big given current information. I send it now because it might spur more ideas for ways of looking at this project.

Phil

Phillip North  
Environmental Protection Agency  
Kenai River Center  
514 Funny River Road  
Soldotna, Alaska 99669  
(907) 714-2483  
fax 260-5992  
north.phil@epa.gov

"To protect your rivers, protect your mountains."

From: John Amos <John@skytruth.org>  
To: Phil North/R10/USEPA/US@EPA

Date: 02/20/2010 12:53 PM  
Subject: Re: Pebble superimposed on Seattle

More specific links to the full-sized images.

Here is Seattle "before" - <http://tinyurl.com/yeb5khh>  
And with Pebble plan superimposed - <http://tinyurl.com/y8m92rg>

- j

John Amos wrote:

> Phil - finally got this done - see <http://tinyurl.com/y8dv9f8> and feel  
> free to use with SkyTruth credit. - John  
>  
> North.Phil@epamail.epa.gov wrote:  
>  
>> John,  
>> I just finished a presentation on the Pebble Mine for EPA managers in  
>> Anchorage and Seattle. Your image of a scenario from the mine  
>> superimposed on Anchorage was a very good visual to help them understand  
>> the scale of the project. I was wondering if you have a similar image  
>> with a scenario of the mine superimposed on Seattle. We will be  
>> briefing the new Regional Administrator when that person is appointed.  
>> They are likely to be more familiar with Seattle than Anchorage.  
>>  
>> Phil  
>>  
>> Phillip North  
>> Environmental Protection Agency  
>> Kenai River Center  
>> 514 Funny River Road  
>> Soldotna, Alaska 99669  
>> (907) 714-2483  
>> fax 260-5992  
>> north.phil@epa.gov  
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John Amos  
[John@skytruth.org](mailto:John@skytruth.org)  
P.O. Box 3283  
Shepherdstown, WV 25443-3283  
phone: 304-260-8886  
skype: skytruth.amos

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